



World Meteorological Organization  
Weather • Climate • Water

# WMO's Role in the Development of Space Weather Service Delivery Requirements for International Aviation

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# Content

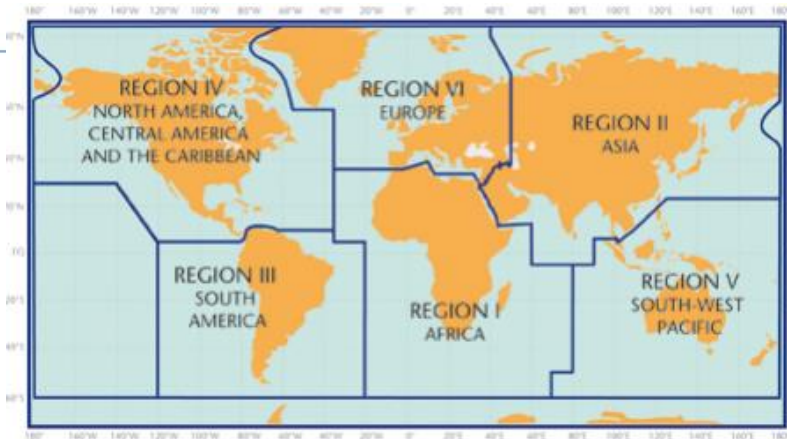
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1. WMO and ICAO Overview
  2. International Aviation MET Service Provision Models
  3. ICAO Space Weather SARPs
  4. What happens next...
-



# WMO

- UN voice on weather, water & climate
- 191 Members
- 6 Regional Associations
- 8 Technical Commissions
- Secretariat Programme coordination
- Science, Obs, data into services, QMS & personnel competency
- ICTSW





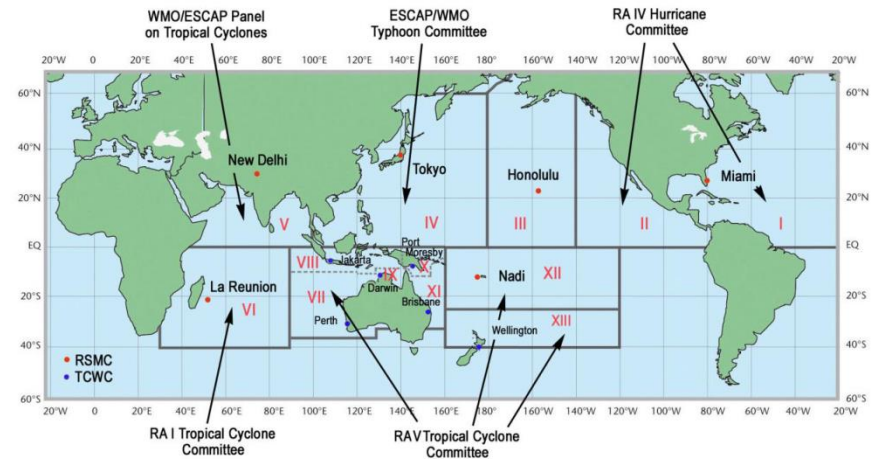
# ICAO

- UN civil aviation authoritative voice
- 191 Contracting States
- International Standards And Recommended Practice (SARPs)
- Annex 3 – International Services to International Air Navigation
- Working Arrangements with WMO
- International Airways Volcanic Watch Operations Group (IAVWOPSG)





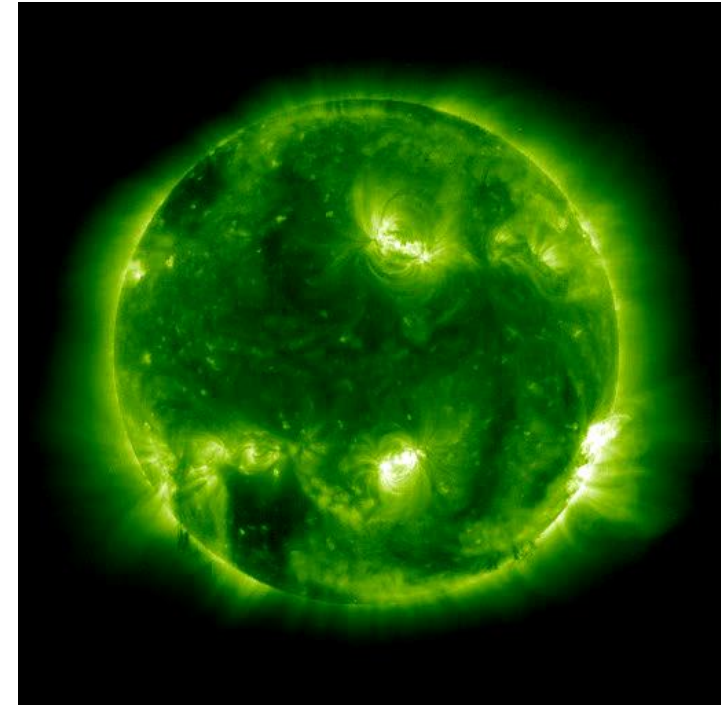
- 2 WAFC
- 9 VAAC
- 7 TCAC
- 10s of MWOs
- Harmonisation
- SWIM
- GANP to 2028





# ICAO SARP Space Weather Centre

- A centre designated by **regional air navigation agreement (PIRGs)** to provide information on space weather affecting the earth's surface or atmosphere that is expected to affect communications and navigation systems and may pose a radiation risk to flight crew members and passengers.



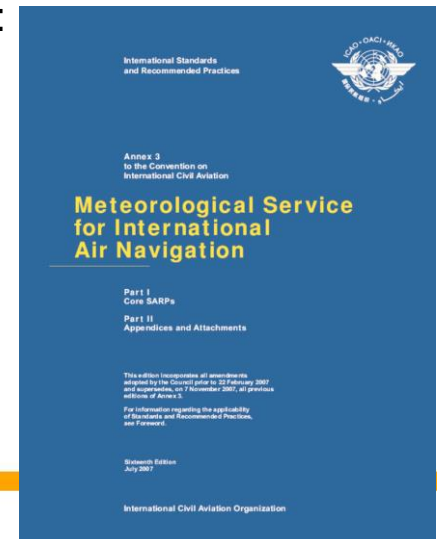


# ICAO Space Weather SARPs

## 3.8 Space weather centres.... *Shall maintain a 24-hour watch*

3.8.1 A Contracting State, having accepted, by regional air navigation agreement, the responsibility for providing a space weather centre (SWXC), shall arrange for that centre to:

- provide information on space weather affecting the earth's surface or atmosphere expected to affect communications and
- navigation systems and which may pose a radiation risk to flight crew members and passengers by arranging for that centre to:
  - a) Monitor relevant ground-based, airborne, and space-based observations to detect the existence and extent of the following in the area concerned:
    - 1) geomagnetic storms;
    - 2) solar radiation storms;
    - 3) solar flares that result in radio blackout; and
    - 4) ionosphere activity.
  - b) Provide space weather information regarding the type, intensity and extent of the space weather referred to in a);
  - c) Supply space weather information referred to in b)

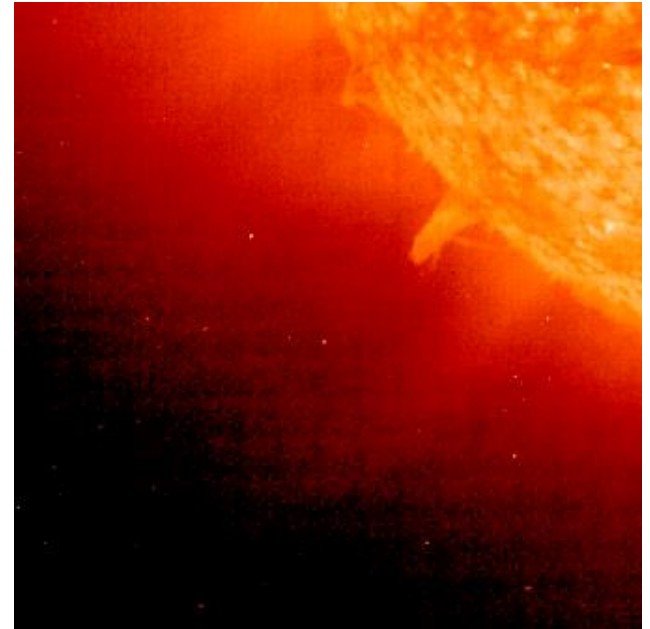






# ICAO SPW SARP<sub>s</sub>

- *...Note - Guidance on the provision of space weather information is provided in the Manual on the Effects of Space Weather on International Air Navigation (**Doc #####**)!!!*
- ICAO SPW Concept of Operations
- Cost recovery mechanisms







# What happens next...?

